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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,365	12/31/2003	Navin Kabra	5760-19000	1161

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EXAMINER	
GEREZGIHER, YEMANE M	
ART UNIT	PAPER NUMBER
2144	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,365	KABRA ET AL.	
	Examiner	Art Unit	
	Yemane M. Gerezgiher	2144	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 21-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 21-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been examined. Claims 1-12 and 21-26 are now pending.

Information Disclosure Statement

2. The Examiner has considered the references listed on the Information Disclosure Statement submitted on 08/22/2005 (see attached PTO-1449).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 21-26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 21 recite "A carrier medium comprising program instructions..." (See Claim 21, Claim Line 1). The carrier medium is not limited to statutory subject mater. In view of Applicant's disclosure, See Specification Page 43 ¶1, the carrier medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments [e.g., computer readable

storage media, see Page 43 ¶1 "...a carrier medium may include **storage media or memory media such as magnetic or optical media**, e.g., disk or CD-ROM, volatile or non-volatile media such as RAM (e.g. SDRAM, DDR SDRAM, RDRAM, SRAM, etc.), ..."] and intangible embodiments [e.g., transmission media or other suitable media in which logic may be encoded for carrying instructions, See Page 43 ¶1, "...**a carrier medium** may include... **transmission media or signals such as electrical, electromagnetic, or digital signals, conveyed via a communication medium such as network** and/or a wireless link". As such, the claim(s) is/are not limited to statutory subject matter and is therefore non-statutory.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-12 and 21-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Jain et al (U.S. Patent Number 5,806,075).

As per claims 1 and 21: Jain disclosed A system comprising: a network including a plurality of computing nodes (Abstract, Column 3, Lines 50-52 and Column 5, Lines 12-23, plurality of communication nodes); a plurality of replicas of an object, wherein the plurality of replicas are stored on a first plurality of the nodes (Abstract, Column 3, Lines 50-55 and Column 6, Lines 29-36, plurality of replicas stored on the plurality of communication nodes on the network); wherein the network includes a first node operable to initiate an update operation to update the plurality of replicas of the object (Column 3, Line 51, Column 4, Lines 22-24, Column 6, Lines 53-61, updating replicas by utilizing a replication modification process on the plurality of communication nodes over a P2P network) wherein said updating the plurality of replicas of the object comprises updating a subset but not all of the replicas (Column 3, Lines 55-58, Column 5, Lines 15-22 and Column 10, Lines 31-37, asynchronous modification replication function updating a portion (subset) of the replicas or updating only nodes that are available over the network); wherein for each node on which one of the replicas was updated in the update operation, the node is operable to add the object to a list of incoherent objects (Column 3, Lines 55-67, Column 4, Lines 1-4, Column 10, Lines 31-44 and Column 11, Lines 20-27, partial replication on remote nodes and listing information on a transactional table containing information on each node, differed

modification/replication information indicating on which nodes the updating/replication is performed or to be performed).

As per claims 2 and 22: Jain disclosed that said initiating the update operation to update the plurality of replicas of the object comprises initiating an update operation to attempt to update all of the replicas (Column 3, Lines 50-52, replication modification attempt to all the nodes over the P2P network); wherein only the subset of the replicas are updated because one or more of the replicas are unreachable (Column 3, Lines 57-58, differed replicate modification for the nodes not available).

As per claims 3 and 23: Jain disclosed that said updating the subset of the replicas includes updating a first replica, wherein the first replica is stored on a second node (Column 10, Lines 44-56); wherein after said adding the object to the list of incoherent objects, the second node is operable to attempt to communicate with all the replicas of the object (Column 3, Lines 55-67, Column 4, Lines 1-4, Column 10, Lines 31-44 and Column 11, Lines 20-27); wherein if all the replicas of the object are reachable then the replicas that were not in the subset of replicas that were updated are synchronized with the replicas that were updated (Column 10, Lines 31-43).

As per claim 4: Jain disclosed that said updating the subset of the replicas includes applying a first change to each replica in the subset of the replicas (Column 3, Lines 55-67, Column 4, Lines 1-4,); wherein said synchronizing the replicas that were not in the subset of replicas that were

updated with the replicas that were updated comprises applying the first change to each replica that was not in the subset (Column 5, Lines 15-22 and Column 10, Lines 31-37).

As per claims 5 and 24: Jain disclosed that after said synchronizing, each node in the subset of replicas that were updated is operable to remove the object from its list of incoherent objects (Column 5, Lines 11-33 and Column 8, Lines 15-29).

As per claim 6: Jain disclosed that the list of incoherent objects on the second node includes a plurality of objects, wherein each object has a plurality of replicas (Column 3, Line 50 through Column 4, Lines 24), wherein the plurality of replicas for each object are stored on a plurality of nodes; wherein for each object in the list of incoherent objects on the second node, the second node is operable to attempt to communicate with all the replicas of the object to synchronize the replicas (Column 3, Lines 50-55 and Column 6, Lines 29-36).

As per claims 7 and 25: Jain disclosed that the second node is operable to periodically perform said attempting to communicate with all the replicas of the object (Column 3, Lines 50-52, replication modification attempt to all).

As per claims 8 and 26: Jain disclosed that if said periodically attempting to communicate with all the replicas of the object has not succeeded after a first amount of time has passed, the second node is operable to initiate an

operation to create one or more new replicas of the object to replace one or more unreachable replicas of the object (Column 10, Lines 31-43).

As per claim 9: Jain disclosed for each node on which one of the replicas was updated in the update operation, the list of incoherent objects on the node is stored in persistent storage (Column 3, Line 50 through Column 4, Line 24, since the teachings of Jain is based on a computer based invention a persistent storage is inherently disclosed); wherein for each node on which one of the replicas was updated in the update operation, said node adding the object to its list of incoherent objects does not include changing the list of incoherent objects in persistent storage (Column 10, Lines 31-44 and Column 11, Lines 20-27); wherein for each node on which one of the replicas was updated in the update operation, the node is operable to periodically update its list of incoherent objects in persistent storage to reflect new additions to the list (Column 3, Lines 55-67, Column 4, Lines 1-4, Column 10, Lines 31-44).

As per claim 10: Jain disclosed that the plurality of replicas of the object comprises a plurality of persistent replicas of the object (Column 3, Lines 50-55 and Column 6, Lines 29-36).

As per claim 11: Jain disclosed that said initiating the update operation to update the plurality of replicas of the object comprises initiating a distributed transaction to update at least a quorum of the replicas; wherein said updating the subset of the replicas comprises updating a quorum of the

replicas (Column 3, Lines 55-67, Column 4, Lines 1-4, Column 10, Lines 31-44 and Column 11, Lines 20-27, partial replication of replicas on remote nodes).

As per claim 12: Jain disclosed that said updating the subset of the replicas comprises applying a change to data in each replica in the subset (Column 4, Lines 1-4, Column 10, Lines 31-44).

Conclusion

6. The prior art made of record and not relied upon is considered particularly pertinent to applicant's disclosure.

a. LeCrone et al. (US 6910098 B2) entitled: "Method and apparatus for maintaining data coherency"

b. Landin (US 20020188624 A1) entitled: "Active control protocol for peer-to-peer database replication"

c. Ernst (US 20050086384 A1) entitled: "System and method for replicating, integrating and synchronizing distributed information"

d. Bhuyan (US 7158998 B2) entitled: "Efficient synchronous and asynchronous database replication"

e. Zondervan et al. (US 6516327 B1) entitled: "System and method for synchronizing data in multiple databases"

f. Wilson (US 6718347 B1) entitled: "Method and apparatus for maintaining coherence among copies of a database shared by multiple computers"

g. Pauly et al. (US 6910053 B1) entitled: "Method for data maintenance in a network of partially replicated database systems"

h. Shaheen et al. (US 5434994 A) entitled: "System and method for maintaining replicated data coherency in a data processing system"

i. Sundararajan et al. (US 7152076 B2) entitled: "System and method for efficient multi-master replication"

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yemane M. Gerezgiher whose telephone number is (571) 272-3927. The examiner can normally be reached on 9:00 AM - 6:00 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on (571) 272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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